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Get ready for the next optical fibre revolution

DIGITAL SURVIVOR

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Five years ago, few people were using e-mail and the Web barely existed. Today, these tools are indispensable. We've seen a workplace revolution as new technologies have become a key part of daily life.

Yet the way in which we communicate is set to change in far more dramatic ways. We are entering the world of the yottabit, where each of us will have a communications link that is equal in size to all existing global capacity today.

This is happening primarily because of fascinating developments with optical fibre technology. You may not realize it, but when you surf the Internet, talk on the phone or use your debit card, there's a good chance you are using optical fibre.

Consider what happens when you talk on the phone: Your voice is turned into little pulses of laser light that can be transmitted through a tiny strand of silicon smaller than a human hair. It's the way in which this laser transformation occurs that is causing a revolution.

In the laboratories of companies such as Nortel Networks and Lucent Technologies, researchers have been figuring out how to squeeze ever more information into a single fibre. The results are stunning — it is said one tiny optic fibre could now carry, all by itself, every single telephone call occurring at this moment in North America — more than 15 million simultaneous calls.

Not impressed? Think of it this way — if you added up all of the telephone calls made in North America last year and tried to get them through a single "old-fashioned" optical fibre strand, it would take you about 15,000 years to do so. The leading-edge technology could do the same thing in but 11 days.

This type of technology is rapidly emerging from the research lab and is set to become an integral part of our global telecommunications network through the next several years.

Of course, that isn't the only major development occurring — many companies are putting lots of new optical fibre networks in place. The chairman of AT&T recently estimated that worldwide, about 2,400 kilometres of new fibre is going into the ground every hour of every day, 365 days a year. That is also helping to fuel a situation in which total global telecommunications capacity is growing at an exponential rate.

The impact is dramatic, in that the cost to communicate huge amounts of information anywhere in the world essentially becomes nil.

Put this into perspective in light of your office five years from now. I bet that a high-tech startup will realize that there is a business opportunity in providing an actual optical fibre connection, rather than today's cable modem or ADSL connection.

With this link, you'll have unlimited global calling, high-quality video conferencing, your own "broadcast station" to reach your clients, and the ability to send and receive hour-long video training courses by e-mail.

If you think life has changed in the past five years, things are about to become far more interesting.

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